

Pocasset River Subwatershed Bourne, Cape Cod, Massachusetts

The Pocasset River subwatershed is located in Bourne with its easternmost portion in Sandwich. It has an area of 2,153 acres. A portion of the subwatershed is designated as the Pocasset River Area of Critical Environmental Concern (ACEC). This ACEC was established in 1980 and is 150 acres. It is a relatively small river and estuarine system, but contains diverse resources ranging from the salt marsh, tidal lands, and floodplains of the estuary to the connecting freshwater wetlands, ponds, and streams. The freshwater ponds in the area provide seasonal habitat for water birds and other wildlife. At least 40 bird species are probably or confirmed breeders in the area. The ponds support recreational fishing and the estuary supports the town's most productive oyster crop. A comprehensive ecological inventory of the lower portions of this system has been made.

According to The Coalition for Buzzards Bay Baywatchers II Report (1999), the upper freshwater portion of Pocasset River has surface water drainage from a series of small ponds. Seaward of Mill Pond, the lower river widens, is tidal, and can be classified as a drowned river estuary. The estuarine portion of the watershed is approximately 198 acres and, at 68 acres, supports a proportionately large amount of wetland area.

This subwatershed is lightly developed with 80% of its area forested. Just over half of the land area is in the Massachusetts Military Reservation. A build-out analysis done by the Cape Cod Commission found that the watershed has significant development potential as the number of housing units can triple at build-out. The Baywatchers II Report of 1999 states that current nitrogen inputs are well below levels necessary to degrade the estuary's quality, but may reach detrimental levels at full build-out of the subwatershed. The subwatershed presently has a low residential density of 0.2 units per acre.

The water quality within the estuary is typical of a system with tidal wetland and freshwater inflows and relatively low watershed nitrogen loading. Oxygen levels within the mid region of the lower estuary typically show modest depletion. The dissolved oxygen levels in the system showed improvement between 1992 and 1998. Low dissolved oxygen levels observed by the Buzzards Bay Baywatchers in 1995 were likely due to meteorological conditions, so the potential exists for future oxygen depletions. The key parameters sampled by the Buzzards Bay Baywatchers indicate that the system is a relatively healthy lower riverine estuary.

The town has a municipal water system, but there are no public sewers in this subwatershed. In Spring 2002, three of the Town of Bourne's six public water supply wells were closed due to contamination from the Massachusetts Military Reservation. Traces of the chemical perchlorate, used in explosives, were found in them. The town decided to join the Upper Cape Water Supply Cooperative to make up for the projected water shortfalls. The military funded a pipeline to link the Bourne district water main to the Upper Cape Water Supply in June 2002.

Stewards:

- The Coalition for Buzzards Bay – Buzzards Bay Baywatchers (www.savebuzzardsbay.org)

Studies conducted in the watershed:

- Baywatchers II. Nutrient related water quality of Buzzards Bay embayments: a synthesis of Baywatchers monitoring 1992-1998. The Coalition for Buzzards Bay. December 1999.

- Nitrogen loading study, Buzzards Bay Project, 1994.
- Atlas of Tidally Restricted Salt Marshes – Buzzards Bay Watershed, Massachusetts. 2002. Buzzards Bay Project National Estuary Program.
- Atlas of Stormwater Discharges in the Buzzards Bay Watershed, Final Draft. June 2002. Buzzards Bay Project National Estuary Program.

Who is collecting water quality data and where:

- Coalition for Buzzards Bay – Baywatchers. Sample for temperature, water clarity, salinity, dissolved oxygen, chlorophyll a, nitrogen, and phosphorus.

Management actions taken:

- Installation of interpretive signs in the Pocasset River ACEC. Funded through Coastal ACEC Stewardship Grant, 2002.

Subwatershed facts: (For data sources see Appendix)

- 21 E sites: 1 on Barlows Landing Rd.
- Solid waste sites: none
- Zone IIs located in this watershed: 1
- Percent of the undeveloped land that is currently protected (according to 1985/1990 data): 11.8%
- Acres of existing wetlands: 57
- Certified vernal pools: 3
- Named freshwater ponds: Mill, Shop, Freeman, Upper, Opening
- Named rivers or creeks: Pocasset River
- Outstanding Resource Waters: Freeman, Mill, Shop, and Upper Ponds, Pocasset River
- 1998 Massachusetts 303(d) List of Impaired Waterbodies: Pocasset River – pathogens.
- Shellfish growing areas: Pocasset River – closed to shellfish harvesting due to lack of a current sanitary survey. The area near the mouth of the river is closed due to presence of a marina.
- This watershed contains Natural Heritage and Endangered Species Program (NHESP) Estimated Habitats of Rare Wildlife.

Priorities:

- Determine the cause of the observed low oxygen conditions in Pocasset River.
- Maximize tidal exchanges between Pocasset River and Buzzards Bay through management to help maintain the water quality of the river system.
- Lily Pond needs volunteers to participate in the Pond and Lakes Stewardship Project (PALS), measuring water quality and other characteristics of the pond.
- Examine discharge from Shore Road into Pocasset River. Develop BMP.
- Examine remnant clay pipe south of Railroad Bridge.
- Conduct DMF Sanitary Survey to determine if prohibited shellfish areas can reopen.
- Implement those salt marsh restoration projects identified in the 2002 *Atlas of Tidally Restricted Salt Marshes – Buzzards Bay Watershed, Massachusetts* that have been evaluated and prioritized by the town. Sites in this subwatershed are BN28, BN33, BN14, and BN26.
- Acquire open space. Parcels considered a priority for acquisition for water supply protection and development: Bourne Tracts 5, 9, 10, 15, 16, 18, 22, 23, and 30 were ranked as having medium or

high water supply development potential in the Cape Cod Commission's *Priority Land Acquisition Assessment Project* (April 1999). These tracts are located throughout the Town of Bourne.

Recreation:

Camping areas: none

Golf courses: none

Pathways and trails:

- Four Ponds Conservation Area
- www.capecodcommission.org/pathways/trailguide.htm

Public access:

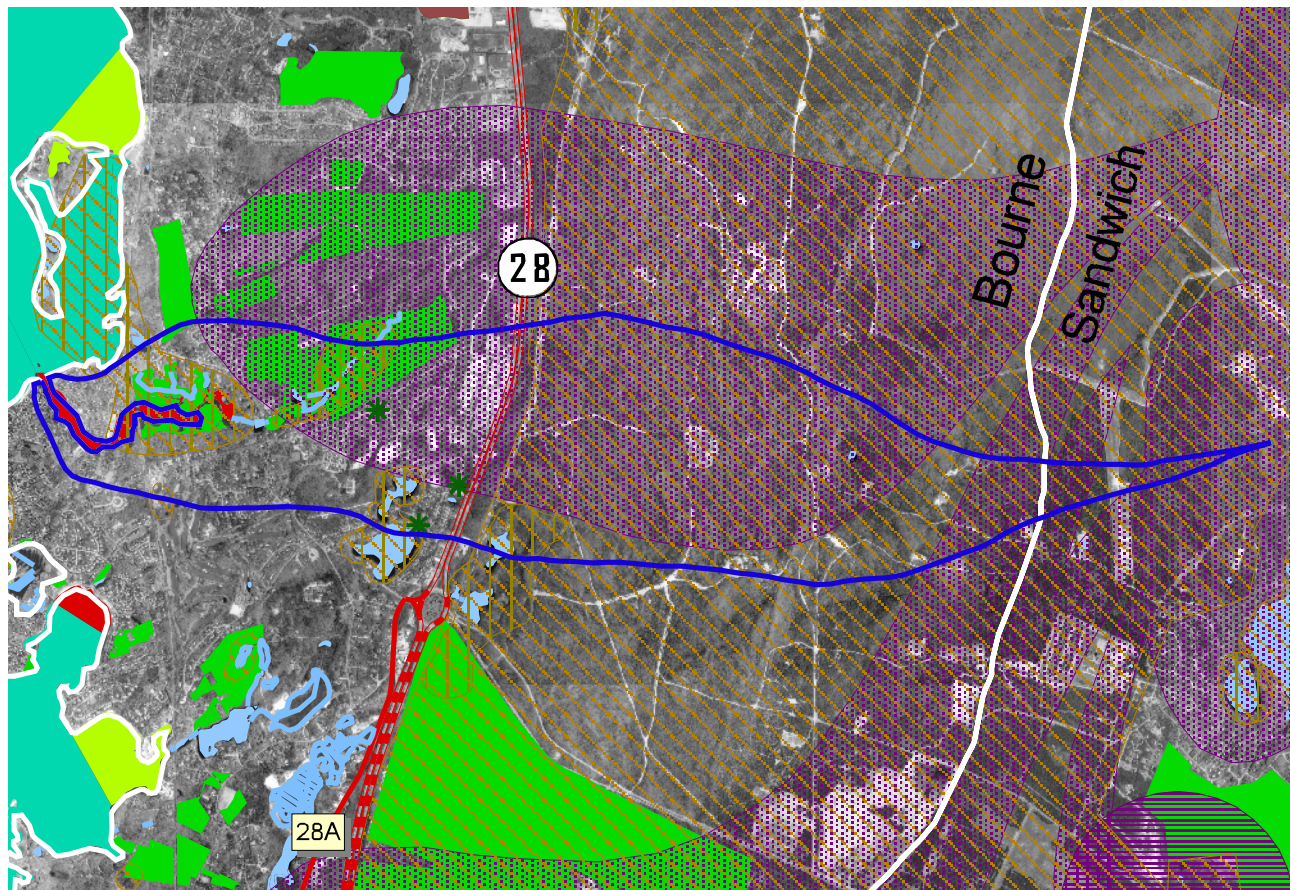
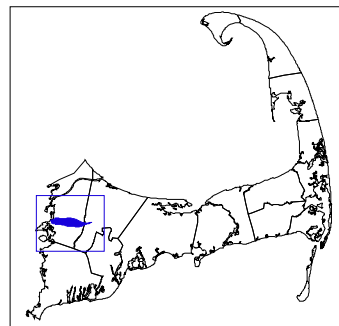
- www.state.ma.us/dfwele/pab/pabSEmap.htm

Public beaches and landings:

- Landing in the Pocasset River
- Approximately 190 moorings and slips
- Tahanto Public Beach

Pocasset River

Bourne, MA



Watershed Resources



0 0.5 1 1.5 Miles



Natural Heritage and Endangered Species Program Data

- Certified Vernal Pool
- Priority Habitats of Rare Species
- Estimated Habitats of Rare Species

Groundwater Protection Areas

- Interim Wellhead Protection Area
- Zone II
- Solid Waste Facility

Watershed Boundary

Anadromous Fish Run

Shellfish Growing Areas

- APPROVED
- CONDITIONALLY APPROVED
- MANAGEMENT CLOSURE
- PROHIBITED
- RESTRICTED

Open Space

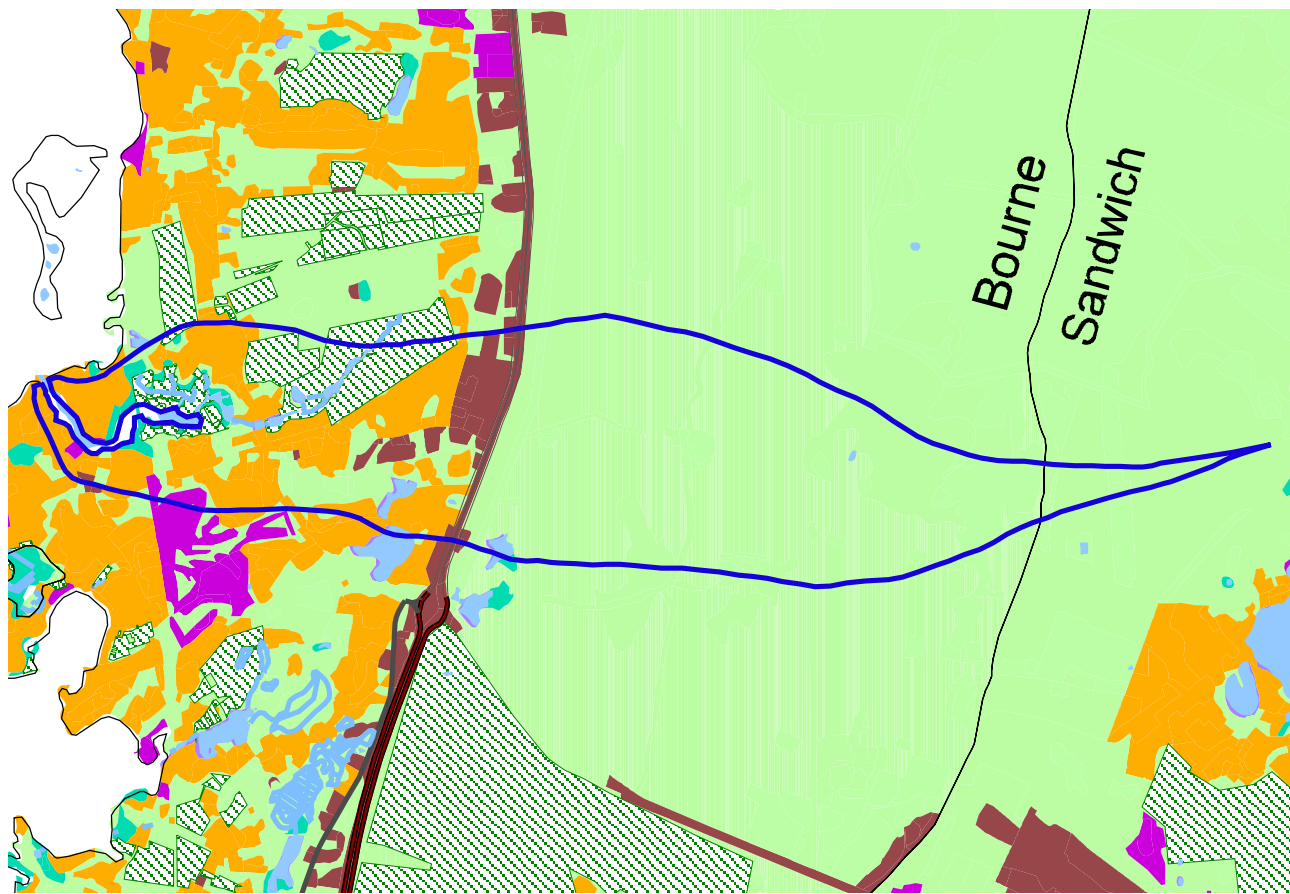
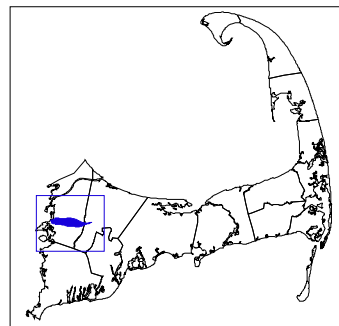
Streams

Ponds

Roads

Pocasset River

Bourne, MA



Land Use



0 0.5 1 1.5 Miles



Land Use

- non-residential developed
- open land
- recreation
- residential
- water
- wetland

- Streams
- Ponds
- Watershed Boundary
- Protected Open Space